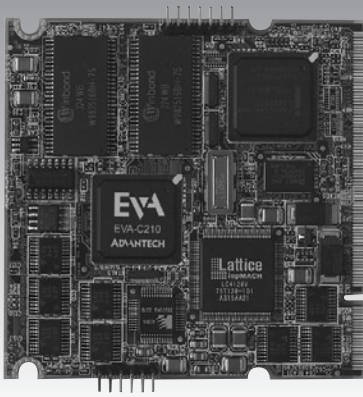# SOM-A2558 Series System On Module

## Intel® XScale® PXA255+Advantech EVA-C210+ Microsoft® Windows® CE .NET 4.2

## Features

- 68 mm x 68 mm x 6.8 mm compact size module
- Power management ready support with Normal, Idle, Suspend, Off mode utilities.
- OS-ready package for Windows CE .NET 4.2/Linux Installation
- Local bus(AMI Bus), comprehensive I/O interfaces as PS/2 port, Ethernet, USB Host and PCI interface support
- Boot option by onboard Flash or CFC makes easy maintenance and cost savings
- Provide a variety of reconfiguration options to fulfill specific requirements
- Design-in Kit package is available for complete design-in support
- Optional RISC CE-Builder assists for customer own image development

## Introduction

### Ultra low power, I/O intensive SOM

Using a dual-chip design principle, SOM-A2558 series System On Module integrates both an Intel XScale PXA255 ultra low power CPU with Advantech's EVA-C210 companion chip. This offers the advantage of integrated controllers, but with multiple I/Os, such as CF, PCMCIA, USB Host, USB Client, RS-232/UART,PCI Bus Rev. 2.2, 10/100Base-T Ethernet, PS/2 ports and RS-485.

### Design-in package ensures fast, low-risk project implementation

The comprehensive design-in package provides developers with not only a completed reference kit and detailed design guide documentations, but also a testing tool set and Windows CE Board Support Package (BSP) for customer target platform image building.

Five support mechanisms are included in the design- in package:

- **Design-in kit:** Provides developers a complete reference design-in suit for application evaluation/development and customer Customer Solution Board (CSB) development.
- **LCD Kit:** Supplies a full range of certified LCD kits in different sizes and types for customers to fit into their target CSB and application.
- **Windows CE builder:** Optional Software Support Platform that allows customers to create/customize/Integrate their own target image
- **Design-in Zone:** Assist Customers with their own CSB development by providing direct and professional technique support in an efficient way.
- **Design-in Forum:** Conducts a series worldwide SOM Design-in Forums/Seminars/Conferences thru various types of activities/formats, giving developers an opportunity/channels to receive and share the most updated information.

## Applications

Ideal for power critical & I/O intensive required base Applications

- Mobile, battery-powered device platform with multi-I/O I/F demands
- Compact diagnostic, monitoring, control equipment or HMI terminals
- Outdoor, fully enclosured, Intelligent remote I/O controllers
- LCD-based vehicle/telemetric platforms for navigation & communication

## Specifications

| Model / Func. | SOM-A2558-440B0 | Reconfiguration Option |
|---|---|---|
| CPU | PXA255- 400 MHz | 200/300/400 MHz |
| I/O Enhance Chip | Advantech EVA-C210 | - |
| Graphic Chip | PXA255 built-in | - |
| System Memory(SDRAM) | 64 MB SDRAM | 32/64/128 MB |
| Boot loader Flash | 1 MB NOR Flash | - |
| On-board Flash (Image & Storage ) | 0 MB | 0/16/32/64 MB |
| OS Image Storage | Thru CFC | - |
| AMI Bus(X1 bus) | 100-pin B2B conn w/ buffer drive | Yes |
| Feature Extension Bus (x3 Bus) | 100-pin B2B conn (the conn. Include PCI,ZV & SD/MMC I/F) | Yes |
| Watch Dog | PXA255 Built-in | - |
| RTC | EVA-C210 Built-in | - |
| System Backup battery | For RTC/SDRAM | - |

| | | |
|---|---|---|
| Serial Ports | 3 x Full RS-232 (TTL); 1 x 2-wires RS-232 (TTL); 1 x 3-wires for RS-232 or RS-485 | - |
| Ethernet | 1x 10/100Base-T | - |
| PCMCIA/ CompactFlash | 2 Slots PCMCIA/CF or 1 x PCMCIA & 1 x CF | - |
| USB Host | 2 x USB 1.1 Host | - |
| USB Client | 1 x USB 1.1 Client | - |
| SD/MMC | 1 x Ch (support 1 bit memory mode) | - |
| PS/2 | 2 x Ch for K/B & MS | - |
| LCD( TTL level) | Up to VGA LCD-16-bit TFT/STN/DSTN | - |
| T/S | 4-wire resistive | Yes |
| Audio Codec | AC'97 codec output. Supports Mic-in, Line-in, Line-out, Speaker-out | Yes |
| Buzzer control | Yes | - |
| SM Bus | Yes | - |
| Hardware Reset | Yes | - |
| Software Reset | Yes | - |
| Resume | Yes | - |
| OS support | Windows CE .NET 4.2 | Linux (By customer request) |
| Power input | 3.3 V/5 V | - |
| Operating temperature | 0 ~ 60° C | Optional -10 ~ 70° C & -20 ~ 80° C capability |
| Operating humidity | 0% ~ 90% | - |
| Certification | FCC/CE | - |
| Form factor | 68 mm x 68 mm x 6.8 mm | - |

Note:"Reconfiguration Option" column provide users many choices. "-": means no option.
If standard product SOM-A2558-440B0's specification doesn't fit developer's requirement, developer could contact with Advantech for SOM-A2558 reconfiguration.

**ADVANTECH** **ARM / XScale Based Embedded Computing Solutions**

* Note: All specifications are subject to change without notice.

# Board Diagram



X1 bus: System Local bus (AMI bus)
X2 bus: SOM-200 I/O bus
X3 bus: Feature extension bus

# Mechanical dimensions

Unit: mm



# Packing list

- Bulk packing with 20 pcs in one box
- SOM comes with bootloader pre-installed only

**Sample image and related documentation included in Design-in kit only.
**SOM does not include Microsoft Windows CE .Net License.

# Ordering Information

## SOM-A2558 Design-in Package

- **SOM-ADK2558-B00 (Must order for design-in)** SOM-A2558 Series Design-in Kit (** without panel bundle, please order designated LCD kit)
- **LCD-A057-STQ1-0 (Optional item)** 5.7" STN QVGA LCD kit. The kit includes 4-wire resistive T/S, inverter, cables and installation guide
- **LCD-A064-TTV1-0 (Optional item)** 6.4" TFT VGA LCD kit. The kit includes 4-wire resistive T/S, inverter, cables and installation guide (** only recommended for PXA255-400 MHz/not recommended for systems under constant heavy loading
- **RSW-ACEBW1-042 (Optional item)** RISC CE-Builder Windows CE .Net 4.2 version 1

## SOM-A2558 Series SOM alone (Minimum 20 pcs/per order)

- **SOM-A2558-440B0** PXA255-400 MHz, 64 MB SDRAM, 1 MB boot flash, both X1 and X3 bus on board.
- **SOM-A2558-230A0** PXA255-200 MHz, 32 MB SDRAM, Boot from CF, with AMI connector on board.
- **SOM-A2558-240N1** PXA255-200 MHz, 64 MB SDRAM, no EVA-C210, Boot from CF, without AMI connector and feature extension connector on board.
- **Order your own reconfigured SOM** Developers can check the reconfigure option of the above specification table to order a customized SOM-A2558 series product. If a customer has reconfiguration demands, please contact a local